

XM Emergency Alert/Situational Awareness Capabilities

September 2006



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XM Satellite Radio Summary

- **Content** – Broad appeal across all demographic groups with a focus on 100% commercial-free music lineup and featuring content such as Major League Baseball, XM Public Radio, Bob Edwards, Bob Dylan, Oprah and XM Instant Traffic, Weather & Alerts
- **Over 7 million subscribers**
- **Over 5 million XM-equipped vehicles manufactured to date**
- **Extending Technology Lead** – Next generation products, featuring portable and Plug & Play devices, to be in market soon



XM Satellite Radio System

- **Established Broadcast Network**
 - Two high-power Boeing-built satellites operating in the S-Band frequency cover the continental US and coastal waters
 - Extensive terrestrial repeater network in metro areas
 - State-of-the-Art Broadcast Operations Center
- **Low Cost, High-Quality Receivers – most less than \$130**
- **System Security**
 - XM maintains ownership of its system– satellite/repeater network, broadcast operations center, XM-developed receiver chipset.
 - System incorporates sophisticated capabilities in data encryption, conditional access control and secure individual addressability for every receiver.
 - XM can control its satellites from four geographically diverse locations.
- **System Redundancy -- Back-up broadcast operations center located in a region geographically-separate from XM's Headquarters/Primary Broadcast Operations Center**



XM Satellite Radio System

- When and where terrestrial systems are down, XM's network can still deliver information to end-users
 - in the event of a power outage, user would need a battery-powered XM radio, e.g., car-installed radios, "boomboxes"
- XM is also working to develop a Crank Radio capable of receiving XM signal in the event of power outages



UNRIVALED SIGNAL DELIVERY



In place today –
over 7 Million users

- Uninterrupted CONUS coverage
- Unrivalled service availability
- S-Band XM Signal robustness
- Exceptional XM Signal strength
- XM Terrestrial Repeater Network
- Space & Time Diversity
- Proven, low cost XM Receivers
- Small, omni-direction XM Antennas
- End-to-end All-Digital system
- State-of-art XM Broadcast Facility
- Optimum solution for voice and data broadcast to a mobile receiver = XM!



Summary of Current XM Emergency Alert/ Situational Awareness Broadcast Activities

- XM has committed to transmit national Emergency Alert System (EAS) messages on all of its channels and state/local alerts on the appropriate Instant Traffic, Weather & Alert channels (which operate on a 24 / 7 basis)
 - ▶ XM has a newsroom on-site, fully-staffed with reporters providing continuously updated reports for each of XM's Instant Traffic, Weather & Alert channels covering 21 metro areas across the nation
 - ▶ Metro areas covered include Los Angeles, San Francisco, Dallas, Chicago, Boston, New York, Philadelphia, Wash DC, Miami
- XM's Emergency Alert Channel (CH. 247) provides critical, timely information in the event of a regional or national disaster. XM receives such information from sources such as FEMA, NOAA, HHS, American Red Cross. One who buys an XM radio (or whose car has one) automatically receives this channel (i.e., need not be a paying subscriber to get this channel)



Summary of Current XM Emergency Alert/ Situational Awareness Broadcast Activities

- During the aftermath of Hurricane Katrina, XM aired the “Red Cross Radio” channel, which enabled the Red Cross to provide its workers and the listening public up-to-date disaster relief information; this channel also operated on a 24 / 7 basis. This channel will air again in the event of a similar disaster. XM also donated radios to Red Cross relief workers and aid stations
- XM’s Instant Traffic, Weather & Alert channels air Amber Alerts and also receive other types of alerts directly from local governments (including counties within the Washington, DC and New York City areas)
- XM has also met with the FCC to discuss its plans to provide state and local EAS alerts, and its capabilities and limitations in doing so. XM understands the FCC is considering adopting a decision soon concerning state and local EAS issues.



Summary of Current XM Emergency Alert/ Situational Awareness Broadcast Activities

- XM is participating in the effort to upgrade the Presidential-Level EAS system by providing XM EAS receivers to the nation's Primary Entry Points (PEPs) and state emergency operations centers.
- XM has also been working with FEMA and NOAA on the Digital Emergency Alert System (DEAS) National Capital Region (NCR) pilot program for the Integrated Public Alert and Warning System (IPAWS). The goal of the project is to demonstrate the digital capabilities of satellite radio, and other communications technologies, to enhance the dissemination of alerts and warnings to the American public.
- XM also provides real-time weather information to specialty receivers with graphical displays within the marine and general aviation community



XM WX Satellite Weather



AVIDYNE



**Rockwell
Collins**

XM WX has been widely adopted by leading avionics and navigation manufacturers as the new industry standard for aviation, marine and emergency response



Flying Magazine Editors' Choice Award 2005

XM WX is now factory-specified on over 80% of all new General Aviation aircraft



**SATELLITE
WEATHER**



GNS 530



RMX 20



G1000

GARMIN



XM NavTraffic

- The nation's first satellite traffic data information service, enhancing the vehicle's navigation system with continuously updated traffic data
- Enables on-board navigation systems to provide personalized traffic information for each driver's needs
- The best available traffic information, aggregated from multiple government and commercial sources
- Adds daily relevance to navigation and helps congestion mitigation
- Widely adopted by leading automotive manufacturers and aftermarket navigation systems providers



The Task: Situational Awareness

- Accurate / timely information is extremely valuable to geographically diverse mobile users.
- Challenge: Providing real-time information to decision-makers and field agents who may be in disparate locations (on land, on sea, in air).
- XM's Capability: Reaching all decision-makers and all field agents (or a defined subset of this group) simultaneously.



The Task: Emergency / Crises Command and Control

- Timely Information Broadcasts are key to keeping diverse disciplines / agencies on the same page
 - ▶ As the first reports from ground zero are received they can be transmitted to anywhere to help alleviate confusion early in an event.
 - ▶ Direct multiple resources simultaneously; direct assets to where they are needed.
 - ▶ Quickly reallocate resources as new information becomes available.
- Inter-agency cooperation – XM system can provide Federal, State and Local authorities with the same information in real-time.



XM Signal Security/ System Redundancy

- Secure, bandwidth-efficient method of configuring receivers to ACCESS service.
- Individually addressable radios enable XM or client to approve delivery of any or all of our service using a robust and secure over-the-air key distribution scheme.
 - ▶ Government Agency can deliver a voice or data message to an individual radio or a select group of radios.
 - ▶ State-of-the-art encryption ensures that no one else receives the message.
 - ▶ Government Agency can define which of the over 170 commercial channels broadcast by XM each radio can receive (e.g., program the radio to receive only news channels and Government Agency's private channel).
- XM has a back-up broadcast operations center (located in a region geographically-separate from XM's headquarters) that can receive and uplink to our satellites the same programming handled by XM's primary broadcast operations center in D.C.



Additional Information



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APPEAL TO MASS MARKET

The Most Commercial-Free Music (Deep, Diverse Playlist)

Sports:

The Most Play-by-Play Sports

The Most Sports Talk

Expanded Regional News, Talk and Music

Talk Stars:

Bill O'Reilly, Al Franken, Dr. Laura, Opie & Anthony

Kids & Family:

Award-Winning Kids and Family Programming

THE MOST CHOICE IN SATELLITE RADIO – OVER 170 CHANNELS COAST TO COAST

THE MOST 100% COMMERCIAL-FREE MUSIC CHANNELS

Decades	Pop & Hits	Rock
1 100% 70s 70s Rock/Soft Rock	1 100% 80s 80s Hits	1 100% 90s 90s Hits
2 100% 60s 60s Hits	2 100% 70s 70s Hits	2 100% 80s 80s Hits
3 100% 50s 50s Hits	3 100% 60s 60s Hits	3 100% 70s 70s Hits
4 100% 40s 40s Hits	4 100% 50s 50s Hits	4 100% 60s 60s Hits
5 100% 30s 30s Hits	5 100% 40s 40s Hits	5 100% 50s 50s Hits
6 100% 20s 20s Hits	6 100% 30s 30s Hits	6 100% 40s 40s Hits
7 100% 10s 10s Hits	7 100% 20s 20s Hits	7 100% 30s 30s Hits
8 100% 00s 00s Hits	8 100% 10s 10s Hits	8 100% 20s 20s Hits
9 100% 90s 90s Hits	9 100% 00s 00s Hits	9 100% 10s 10s Hits
10 100% 80s 80s Hits	10 100% 90s 90s Hits	10 100% 00s 00s Hits
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45 100% 30s 30s Hits	45 100% 40s 40s Hits	45 100% 50s 50s Hits
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Aligned with Major Music Brands

**Hispanic Music,
Sports & News**

Especially for Women:

Oprah & Friends, Ellen DeGeneres, Tyra Banks, Take Five

Creating New Categories:

Comedy, Book and Drama

**21 Dedicated
Channels of XM
Instant Traffic
& Weather**



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Recently Launched XM Products

Portable



- **Pioneer Helix & Samsung Inno** – portable live XM devices with MP3 capabilities

Plug & Play



- **AGT Sportscaster** – brand new plug & play XM receiver

Component Audio



- **Polk Audio XRt12** – Reference XM Satellite Radio Home Tuner

Connect & Play Technology



- **XM "Passport"** – Micro tuner compatible with the universe of XM-enabled devices

